National Institute of Environmental Health Sciences

Vibrio vulnificus: Death on the half shell. A personal journey with the pathogen and its ecology

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Abstract:

Vibrio vulnificus is an estuarine bacterium which occurs in high numbers in filter-feeding molluscan shellfish, such as oysters. In individuals with certain underlying diseases, ingestion of the bacterium, e.g., in raw or undercooked oysters, can lead to a rapid and extremely fatal infection. Indeed, this one bacterium is responsible for 95 % of all seafood-borne deaths. In addition, the bacterium is capable of entering a preexisting lesion or cut obtained during coastal recreational activities, resulting in potentially fatal wound infections. This brief review, which comprised a presentation made at the Gordon Research Conference on "Oceans and Human Health," reflects over 35 years of research on this bacterium in the author's laboratory. It describes some of the known virulence factors and why males account for ca 85 % of all V. vulnificus cases. It notes the two genotypes now known to exist and how this pathogen enters a dormant, "viable but nonculturable" state during the winter months. Finally, the review discusses how global warming may be causing worldwide increases in the frequency and geographical extent of Vibrio infections.

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Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Food/Water Quality

Food/Water Quality: Pathogen

Geographic Feature:

resource focuses on specific type of geography

Ocean/Coastal

Geographic Location:

resource focuses on specific location

Global or Unspecified

Health Impact:

specification of health effect or disease related to climate change exposure

Infectious Disease

Infectious Disease: Foodborne/Waterborne Disease

Foodborne/Waterborne Disease: Vibrioses

Resource Type:

format or standard characteristic of resource

Review

Timescale:

time period studied

Time Scale Unspecified